RK P01M

CLIMATE REGULATOR
FOR HEATING SYSTEMS

USER MANUAL

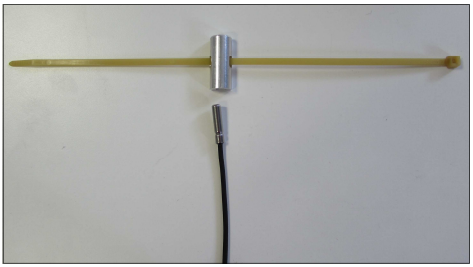
Read carefully before use

CONTENTS OF THE PACKAGE

CLIMATE CONTROL UNIT (1 piece)
Code RK P01M

EXTERNAL TEMPERATURE PROBE (1 piece)
Code ST ED01

SUPPLY/RETURN TEMPERATURE PROBE (2 pcs)
Code ST CD02



OPTIONAL COMPONENTS

ROOM TEMPERATURE PROBE
Code ST AD01

REMOTE CONTROL
Code ACC RK3 COM

RELAY MODULE TO CONVERT LIVE CONTACTS TO VOLTAGE FREE CONTACTS
Code ACC REL 02

MAIN CHARACTERISTICS

- Power supply 230V~
- 4 outputs (3 on/off under power + 1 with voltage free contacts)
- 6 inputs (4 probes + 1 ambient remote control + 1 remote switch)
- Wide backlit LCD display allows you to view the configuration of the hydraulic chart of the system, the status of the outputs, the status of the sensors and other various information and data.

Main functions:
- Adjustment of the supply water temperature with 3-way motorized mixing valve with 3-point control and supply pump
- Adjustment of the temperature of the boiler with 1 or 2 stage control of the burner

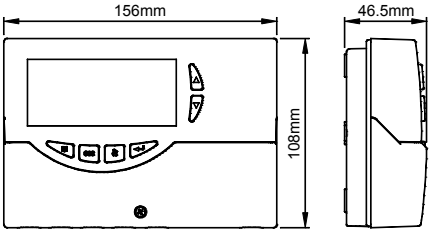
The temperature of the supply water or of the boiler can be adjusted according to:
- the temperature of the outside air
- the temperature of the outside air and the ambient temperature

Other functions:
- Remote control with ambient controller (to change to the set temperature by ±5°C)
- Remote switch (to which it is possible to connect an on/off switch that replaces the internal chrono)
- Hourly weekly programming with 4 room temperature control modes:
  Comfort - Economy - Anti-freeze - OFF
- Up to 4 types of systems
- Freeze protection of the system
- Offset on the external probes
- Anti-condensation function with dedicated pump
- Anti-blocking function of the circulation pump

TECHNICAL FEATURES

Power supply:		±230V~ ±10% 50/60Hz
Maximum consumption:		<1,5 VA
Type of sensors:		NTC 10K @25°C B3977
Sensor operation limit:		-20 °C .. +120 °C
Accuracy:		± 1.0°C
Temperature reading field:		-20°C .. +120°C (probes) ±5°C (remote controller)
Resolution:		0.1°C
Contact capacity:		3 x 2(1)A@250V~ SPST live 1 x 2(1)A@250V~ SPDT voltage free
Degree of protection:		IP 40
Backlight off:		~20 seconds from last key pressed
Operating temperature:		0°C .. 40°C
Storage temperature:		-10°C .. +50°C
Humidity limits:		20% .. 80% RH (non condensing)
Container:	Material:	Self-extinguishing ABS V0
	Colour:	Signal white (RAL 9003)
Size:		156 x 108 x 47 mm (L x A x P)

DIMENSIONS



NORMATIVE REFERENCES

The product complies with the following standards (EMC 2004/108/CE and LVD 2006/95/CE):

EMC Standards:	EN 55014-2 (1997)
Product standard:	EN 60730-1 (2011)
	EN 60730-2-7 (1991)
	EN 60730-2-9 (1995)

WARRANTY

As part of our continuous product development, the manufacturer reserves the right to make changes to the technical data and specifications without notice.
The consumer is guaranteed against any lack of conformity of the product in accordance with European Directive 1999/44/CE as well as the manufacturer's warranty policy. The full text of the warranty is available on request from the seller.

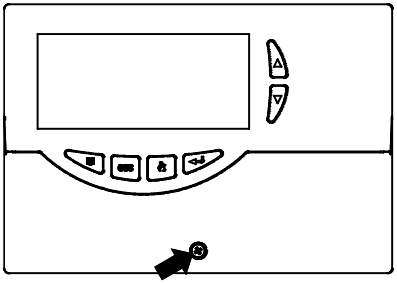
INSTALLATION

⚠ WARNING

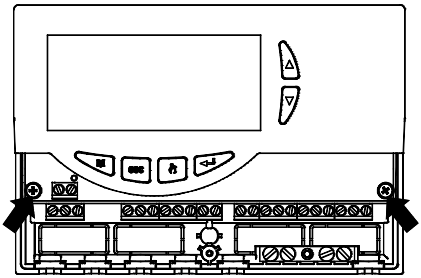
- **The installer must abide by all applicable technical standards in order to ensure the safety of the system.**
- **Before making any connections, make sure that the mains is disconnected.**

TO INSTALL THE DEVICE, PERFORM THE FOLLOWING OPERATIONS:

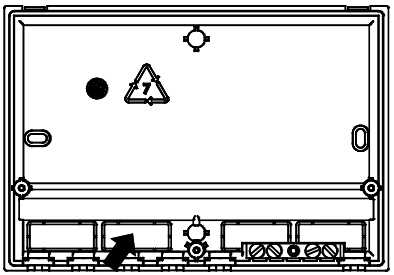
1. Remove the screw indicated and remove the cover.



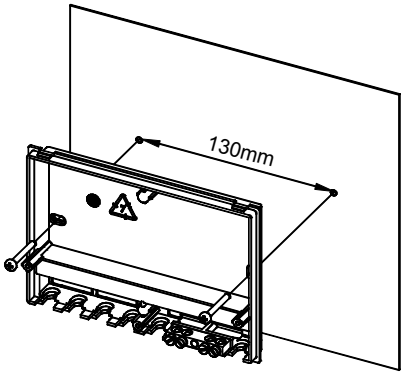
2. Remove the two screws shown and separate the cover with the electronics from the bottom.



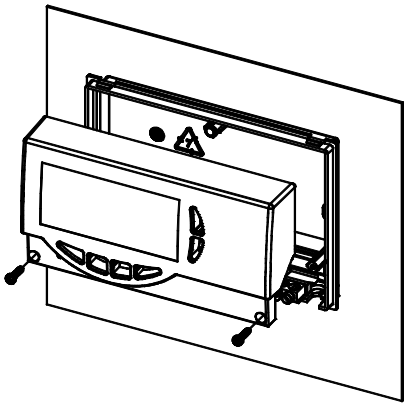
3. ASSEMBLY WITH CABLE ENTRY ON THE BACK:
If the installation does not require the use of cable ties (supplied), remove, with the help of a screwdriver, the dowels at the base needed for the passage of the cables, and at step 6 insert the dowels supplied.



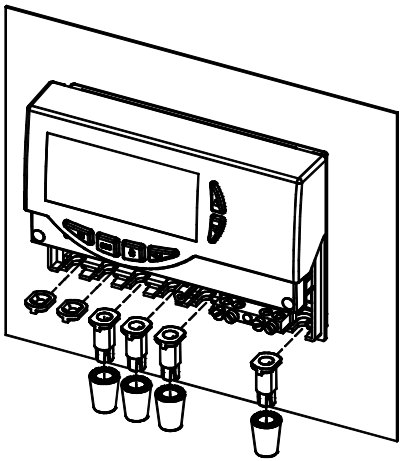
4. Secure the base of the unit to the wall.



5. Replace the cover with the electronics at the bottom.



6. ASSEMBLY WITH CABLE ENTRY ON THE BOTTOM:
Insert the cable ties and/or dowels supplied.



8. Make the electrical connections according to the hydraulic diagram chosen in the installer parameter "**P1 SCH**". Following are the descriptions of the four systems possible.

LEGEND:

TAF OFF: Enable / Disable anti-freeze

TAF: Anti-freeze temperature

I_MAX: Maximum opening or closing pulse

TCO OFF: Enable / Disable Cut-Off

TCO: Cut-Off temperature

ton: Servo motor ON command time

tof: Servo motor OFF command time

DEL: Pump OFF delay

TAL: Periodic activation of pump

TD: Calculated supply temperature

Te: External temperature probe

Td: Supply water temperature probe

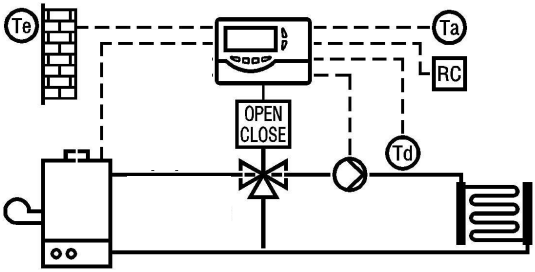
Ta: Ambient temperature probe

RC: (Remote Controller) allows you to change the ambient temperature set from the user menu U4>TCR by ±5°C

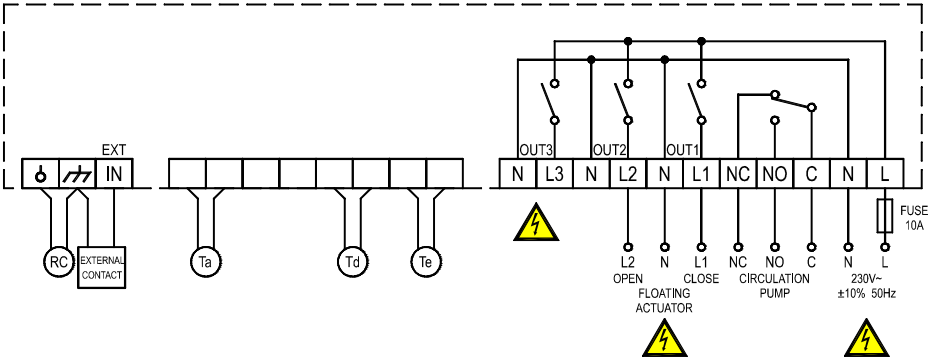
EXTERNAL SWITCH: On/off switch, that replaces the internal weekly programmer

Hydraulic diagram 'SCH_1':

Heating system with the control of a 3-point servo motor and a circulation pump. Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).



Wiring diagram



WARNING

The outputs OUT 1, OUT 2 and OUT 3 are powered 230V; if a voltage free command is required, use the specific accessory for voltage free contacts.

Notes:

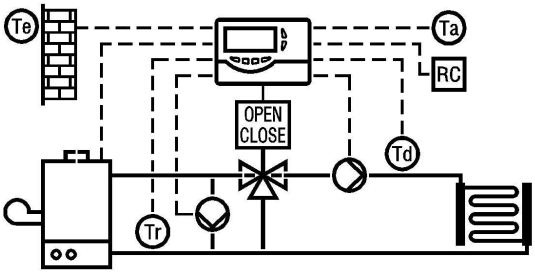
- If the ambient probe "TA" is connected, the calculation of the compensated supply water temperature "**TDC**" is automatic.
- If the Remote Control "RC" is connected, the calculation of the Set-Point temperature "**TC**" or "**TR**" is automatic.
- The calculation of the supply water temperature, "**TD**" or "**TDC**", takes into account the limitations set in the installer parameter **P2** in "**TDL**" and "**TDM**".
- Unit **OFF**: the servo motor is closed with a pulse equal to "**Imax**" (see paragraph "Adjustment with mixing valve with 3-point servo motor and supply pump").
- If the measured supply water temperature "**Td**" is less than the temperature detected by the external probe "**Te**", the servo motor will be closed with a pulse equal to "**Imax**" (see paragraph "Adjustment with mixing valve with 3-point servo motor and supply pump").

LEGEND:

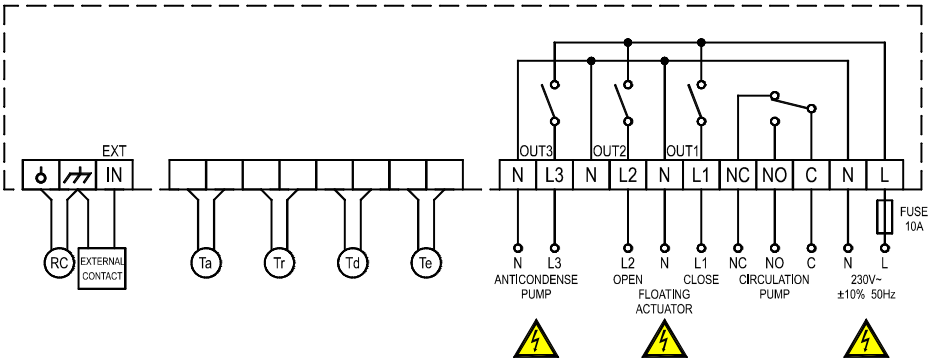
TAC OFF: Enable / Disable anti-condensation function
TAC: Anti-condensation temperature
TAF OFF: Enable / Disable anti-freeze
TAF: Anti-freeze temperature
I_MAX: Maximum opening or closing pulse
TCO OFF: Enable / Disable Cut-Off
TCO: Cut-Off temperature
ton: Servo motor ON command time
tof: Servo motor OFF command time
DEL: Pump OFF delay
TAL: Periodic activation of pump
TD: Calculated supply temperature
Te: External temperature probe
Td: Supply water temperature probe
Tr: Return water temperature probe
Ta: Ambient temperature probe
RC: (Remote Controller) allows you to change the ambient temperature set from the user menu U4>TCR by ±5°C
EXTERNAL SWITCH: On/off switch, that replaces the internal weekly programmer

Hydraulic diagram 'SCH_2':

Heating system with the control of a 3-point servo motor, a circulation pump, an anticondensate pump and a return water temperature probe.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).



Wiring diagram



WARNING
The outputs OUT 1, OUT 2 and OUT 3 are powered 230V; if a voltage free command is required, use the specific accessory for voltage free contacts.

In the event that the boiler is designed to operate even at low return temperatures, without damage, it is possible to turn the circulation pump OFF by setting the return temperature under 10°C. The display will show "OFF-TAC". The return probe Tr must still be connected to the terminals "Tr" even if the recirculation pump is not used.

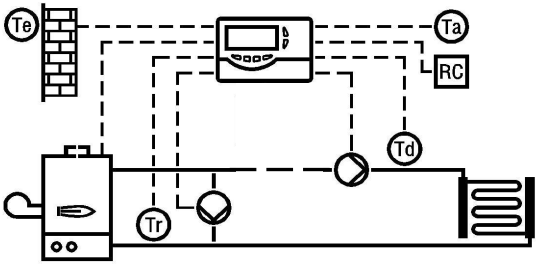
Notes:
- If the ambient probe "TA" is connected, the calculation of the compensated supply water temperature "**TDC**" is automatic.
- If the Remote Control "RC" is connected, the calculation of the Set-Point temperature "**TC**" or "**TR**" is automatic.
- The calculation of the supply water temperature, "**TD**" or "**TDC**", takes into account the limitations set in the installer parameter **P2** in "**TDL**" and "**TDM**".
- Unit **OFF**: the servo motor is closed with a pulse equal to "**Imax**" (see paragraph "Adjustment with mixing valve with 3-point servo motor and supply pump").
- If the measured supply water temperature "**Td**" is less than the temperature detected by the external probe "**Te**", the servo motor will be closed with a pulse equal to "**Imax**" (see paragraph "Adjustment with mixing valve with 3-point servo motor and supply pump").

LEGEND:

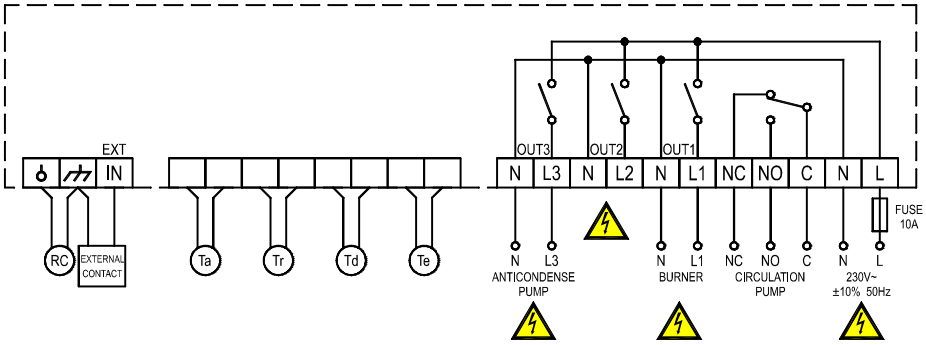
TAC OFF: Enable / Disable TAC function
TAC: Anti-condensation temperature
TAF OFF: Enable / Disable TAF function
TAF: Anti-freeze temperature
TCO OFF: Enable / Disable Cut-Off
TCO: Cut-Off temperature
DEL: Pump OFF delay
TAL: Periodic activation of pump
TD: Calculated supply temperature
tb1 off: Enable / Disable tb1 function
tb1: Burner 1 ON on minimum
to1 off: Enable / Disable to1 function
to1: Burner 1 OFF on minimum
Te: External temperature probe
Td: Supply water temperature probe
Tr: Return water temperature probe
Ta: Ambient temperature probe
RC: (Remote Controller) allows you to change the ambient temperature set from the user menu U4>TCR by ±5°C
EXTERNAL SWITCH: On/off switch, that replaces the internal weekly programmer

Hydraulic diagram 'SCH_3':

Heating system with the 2-point control (ON/OFF) of a single stage burner and a circulation pump.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).



Wiring diagram



WARNING
The outputs OUT 1, OUT 2 and OUT 3 are powered 230V; if a voltage free command is required, use the specific accessory for voltage free contacts.

In the event that the boiler is designed to operate even at low return temperatures, without damage, it is possible to turn the circulation pump OFF by setting the return temperature under 10°C. The display will show "OFF-TAC". The return probe Tr must still be connected to the terminals "Tr" even if the recirculation pump is not used.

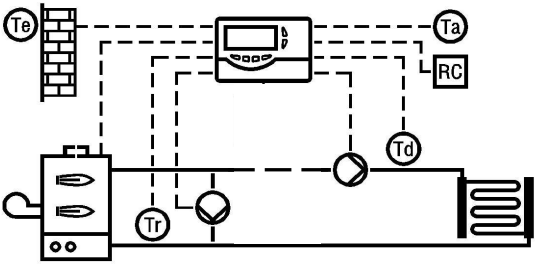
Notes:
- If the ambient probe "TA" is connected, the calculation of the compensated supply water temperature "**TDC**" is automatic.
- If the Remote Control "RC" is connected, the calculation of the Set-Point temperature "**TC**" or "**TR**" is automatic.
- The calculation of the supply water temperature, "**TD**" or "**TDC**", takes into account the limitations set in the installer parameter **P2** in "**TDL**" and "**TDM**".

LEGEND:

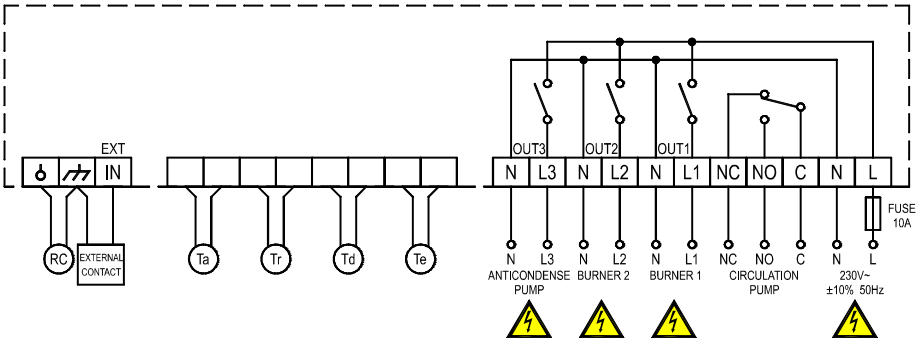
TCO OFF: Enable / Disable Cut-Off
TCO: Cut-Off temperature
DEL: Pump OFF delay
TAL: Periodic activation of pump
TD: Calculated supply temperature
tb1 off: Enable / Disable tb1 function
tb1: Burner 1 ON on minimum
tb2 off: Enable / Disable tb2 function
tb2: Burner 2 ON on minimum
to1 off: Enable / Disable to1 function
to1: Burner 1 OFF on minimum
to2 off: Enable / Disable to2 function
to2: Burner 2 OFF on minimum
Te: External temperature probe
Td: Supply water temperature probe
Tr: Return water temperature probe
Ta: Ambient temperature probe
TAC: Anti-condensation temperature
TAC OFF: Enable / Disable TAC function
TAF OFF: Enable / Disable TAF function
TAF: Anti-freeze temperature
RC: (Remote Controller) allows you to change the ambient temperature set from the user menu U4>TCR by ±5°C
EXTERNAL SWITCH: On/off switch, that replaces the internal weekly programmer

Hydraulic system 'SCH_4':

Heating system with the control of a two-stage burner and a circulation pump.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).



Wiring diagram



WARNING
The outputs OUT 1, OUT 2 and OUT 3 are powered 230V; if a voltage free command is required, use the specific accessory for voltage free contacts.

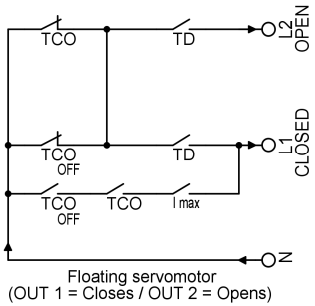
In the event that the boiler is designed to operate even at low return temperatures, without damage, it is possible to turn the circulation pump OFF by setting the return temperature under 10°C. The display will show "OFF-TAC". The return probe Tr must still be connected to the terminals "Tr" even if the recirculation pump is not used.

Notes:
- If the ambient probe "TA" is connected, the calculation of the compensated supply water temperature "**TDC**" is automatic.
- If the Remote Control "RC" is connected, the calculation of the Set-Point temperature "**TC**" or "**TR**" is automatic.
- The calculation of the supply water temperature, "**TD**" or "**TDC**", takes into account the limitations set in the installer parameter **P2** in "**TDL**" and "**TDM**".

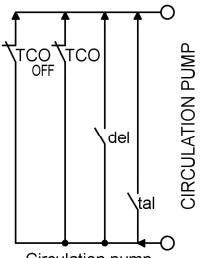
OPERATING LOGIC

Operating logic in accordance with the hydraulic diagram 'SCH_1' (see page 6):

Unit ON

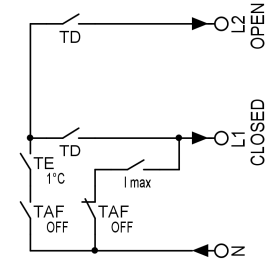


Floating servomotor
(OUT 1 = Closes / OUT 2 = Opens)

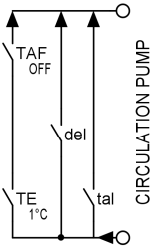


Circulation pump
(changeover relay)

Unit OFF



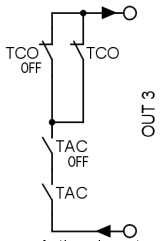
Floating servomotor
(OUT 1 = Closes / OUT 2 = Opens)



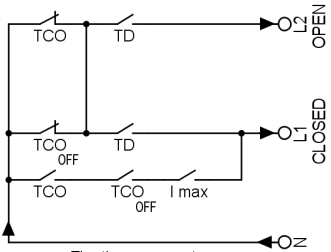
Circulation pump
(changeover relay)

Operating logic in accordance with the hydraulic diagram 'SCH_2' (see page 7):

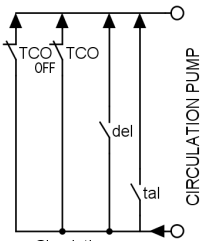
Unit ON



Anticondensate
Pump

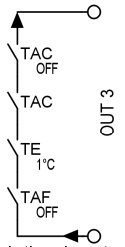


Floating servomotor
(OUT 1 = Closes / OUT 2 = Opens)

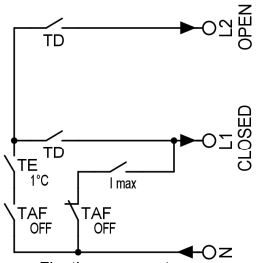


Circulation pump
(changeover relay)

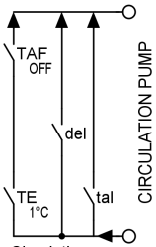
Unit OFF



Anticondensate
Pump



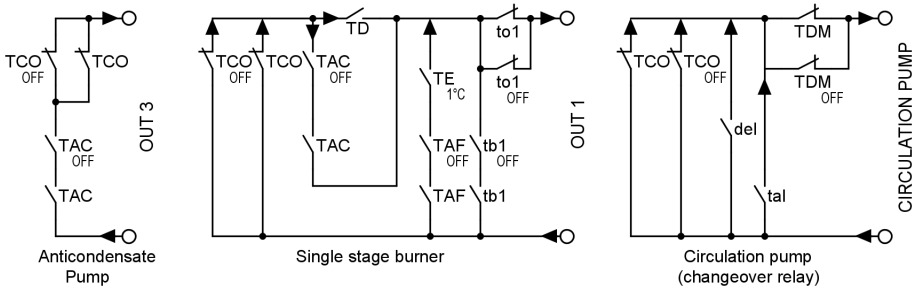
Floating servomotor
(OUT 1 = Closes / OUT 2 = Opens)



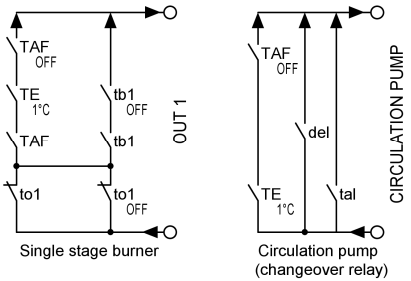
Circulation pump
(changeover relay)

Operating logic in accordance with the hydraulic diagram 'SCH_3' (see page 8):

Unit ON

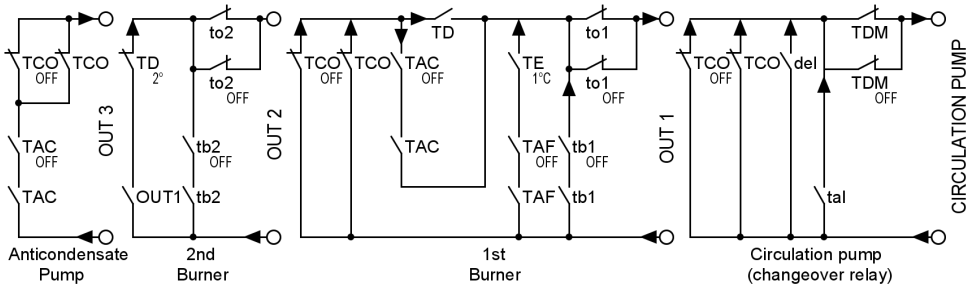


Unit OFF

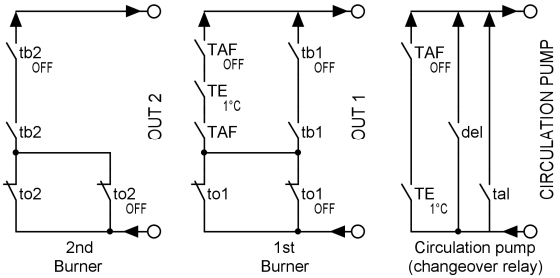


Operating logic in accordance with the hydraulic diagram 'SCH_4' (see page 9):

Unit ON



Unit OFF



NOTES FOR THE ELECTRICAL CONNECTIONS

⚠ WARNING

- **For the correct adjustment of the ambient and external temperature, it is recommended to install the probes away from sources of heat, air currents or particularly cold walls (thermal bridges).**
- **To connect the probes use cables with a minimum cross-section of 1.5 mm² and a maximum length of 25 m. Do not pass the probe cables through the mains conduits.**
- **Connect the device to the mains supply by means of a bipolar switch complying with the regulations in force and with a contact opening distance of at least 3 mm in each pole.**
- **Il the load driven by the relay of the chrono-thermostat works at the mains voltage, it is necessary that the connection is made by means of an omnipolar switch complying with the regulations in force and with a contact opening distance of at least 3 mm in each pole..**
- **The installation and electrical connection of the device must be carried out by trained personnel and in compliance with applicable laws.**
- **Before making any connections, make sure that the mains power is disconnected.**

POWER SOURCE
It is advisable to add to a fuse to the power supply line, of a capacity suitable for the loads connected, which intervenes in the event of a short circuit.
The maximum capacity of the fuse cannot be greater than 10A 250V~.

EARTH TERMINAL
On the base of the unit is a brass terminal board to connect the protective earth conductors of the various devices connected to the unit.

LOADS

PUMP (C-NO-NC):	Circulation pump output with voltage free changeover contacts (SPDT).
OUT 1 (L1-N):	ON/OFF output (powered).
OUT 2 (L2-N):	ON/OFF output (powered).
OUT 3 (L3-N):	ON/OFF output (powered).

PROBES
The climate regulator accepts the following type of temperature probes: NTC 10KΩ @ 25°C ±1%.

Te (External temperature probe): probe, fixed to the wall, to be placed outside (probe supplied).

Td (Supply water temperature probe): probe, fixed to a pipe, to be placed on the supply water piping (probe supplied).

Tr (Return water temperature probe): probe, fixed to a pipe or well, to be placed on the return water piping (probe purchased separately).

Ta (Ambient temperature probe): probe, fixed to the wall, to be placed inside the room where the temperature is to be adjusted (probe purchased separately).

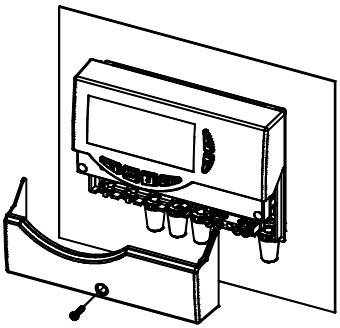
The following page shows the resistance values of the probes.

EXTERNAL CONTROLS:
It is possible to connect two devices to the climate regulator, which will affect the adjustment of the ambient temperature:

RC (remote control): input for the connection of a remote control which allows you to change the comfort "**TC**" or economy "**TR**" temperature set by ±5°C (accessory purchased separately).

REMOTE CONTACT: input for the connection of an **ON/OFF** contact (for example a switch or a timer), which will replace the function of the internal chrono-thermostat (accessory purchased separately).

9. Close the unit by replacing the cover.



⚠ WARNING

When closing the unit make sure that the extractable terminal boards have been inserted correctly (the screws of the terminal board must be facing upwards).

PROBE TABLE

Resistance @ 25°C: 10,00kΩ ±1,0% B Constant: 3977K (25°C/85°C) ±1,0%

Temp°C	Ravg kΩ	**Temp°C**	Ravg kΩ	**Temp°C**	Ravg kΩ	**Temp°C**	Ravg kΩ	**Temp°C**	Ravg kΩ	**Temp°C**	Ravg kΩ
-20	96,26	2	29,49	24	10,45	46	4,1961	68	1,8744	90	0,9169
-18	85,88	4	26,68	26	9,572	48	3,8835	70	1,7502	92	0,8626
-16	76,72	6	24,17	28	8,776	50	3,5973	72	1,6355	94	0,8121
-14	68,64	8	21,92	30	8,054	52	3,3351	74	1,5294	96	0,7650
-12	61,48	10	19,91	32	7,339	54	3,0946	76	1,4312	98	0,7211
-10	55,15	12	18,10	34	6,804	56	2,8738	78	1,3402	100	0,6801
-8	49,53	14	16,47	36	6,263	58	2,6710	80	1,2560		
-6	44,54	16	15,00	38	5,770	60	2,4844	82	1,1778		
-4	40,10	18	13,69	40	5,3212	62	2,3128	84	1,1052		
-2	36,15	20	12,50	42	4,9117	64	2,1546	86	1,0378		
0	32,63	22	11,42	44	4,5378	66	2,0089	88	0,9751		

COMPENSATION COEFFICIENT KS TABLE

Tc = Comfort Temperature (set in the parameter) = 20°C,
KS = External Compensation Coefficient, **Te** = External Temperature

TD = Tc + [KS x (Tc - Te)]
Supply temperature calculated on the basis of the compensation with the External temperature Te

	KS	**KS**	**KS**	**KS**	**KS**	**KS**	**KS**	**KS**	**KS**	**KS**
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Te	**TD**	**TD**	**TD**	**TD**	**TD**	**TD**	**TD**	**TD**	**TD**	**TD**
-30	45	70	95	120	145	170	195	220	245	270
-20	40	60	80	100	120	140	160	180	200	220
-10	35	50	65	80	95	110	125	140	155	170
0	30	40	50	60	70	80	90	100	110	120
10	25	30	35	40	45	50	55	60	65	70
20	20	20	20	20	20	20	20	20	20	20
30	15	10	-5	0	-5	-10	-15	-20	-25	-30
40	10	0	-10	-20	-30	-40	-50	-60	-70	-80

COMPENSATION COEFFICIENT KA TABLE

Tc = Comfort Temperature = 20°C (set in the parameter),
KA = Ambient Compensation Coefficient, **Ta** = Ambient Temperature

TDC = TD + Dta = TD + [KA x (Tc-Ta)]
Supply temperature calculated on the basis of the compensation with the temperatures Te and Ta

dTDA = [KA x (Tc-Ta)]
Value that is added to TD which is compensated also via the ambient probe Ta

	KA	**KA**	**KA**	**KA**	**KA**	**KA**	**KA**	**KA**	**KA**	**KA**
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Te	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**	**dTDA**
-30	25	50	75	100	125	150	175	200	225	250
-20	20	40	60	80	100	120	140	160	180	200
-10	15	30	45	60	75	90	105	120	135	150
0	10	20	30	40	50	60	70	80	90	100
10	5	10	15	20	25	30	35	40	45	50
20	0	0	0	0	0	0	0	0	0	0
30	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50
40	-10	-20	-30	-40	-50	-60	-70	-80	-90	-100

OPERATING PRINCIPLES OF THE CLIMATE REGULATOR

The climate regulator controls and adjusts the ambient temperature by controlling the supply water temperature, **TD**, depending on three parameters:
- Theoretical temperature set (**TC** = Comfort Temperature or **TR** = Economy Temperature)
- External temperature (detected by the "**Te**" probe connected)
- Speed of response of the entire system based on the variations of the external temperature, by means of the adjustment factor **KS** settable by means of the installer parameter **P2**.

The formula to calculate the supply water temperature in comfort mode is the following:

TD = **TC** + [**KS** x (**TC** - **Te**)]

The formula to calculate the supply water temperature in economy mode is the following:

TD = **TR** + [**KS** x (**TR** - **Te**)]

Note:
Climate control is influenced by the presence of the probe that detects the ambient temperature and/or the presence of the Remote Control, as described below.

Compensation with ambient temperature
When a probe that detects the ambient temperature is connected to the unit ("**Ta**" icon ON), the climate regulator will be able to calculate the adjustment of the compensated supply water temperature, **TDC**, based on the actual tendency of the ambient temperature as a function of the following parameters:
- Theoretical temperature set (**TC** = Comfort Temperature or **TR** = Economy Temperature)
- External temperature, detected by the "**Te**" probe connected
- Ambient temperature, detected by the "**Ta**" probe connected
- Compensation coefficient relative to the ambient temperature "**KA**" settable by means of the installer parameter **P2**.

Note: If the ambient probe is not connected, when scrolling the parameters P2 DAT, "KA" will no longer appear.

The formula to calculate the compensated supply water temperature with the ambient temperature in comfort mode is the following:

TDC = **TD** + [**KA** x (**TC** - **Ta**)]

The formula to calculate the compensated supply water temperature with the ambient temperature in economy mode is the following:

TDC = **TD** + [**KA** x (**TR** - **Ta**)]

Warning:
- Place the ambient probe in the place where you want to adjust the ambient temperature, otherwise the adjustment will be distorted.
- If the value of **TDC** resulting from the calculation exceeds the maximum value allowed for the supply temperature, the value of **TDC** will be automatically limited to the value of "**TDM**", settable by means of the installer parameter **P2**.
- If the ambient probe is not connected, the function is disabled and the "**Ta**" icon will not appear on the display.

Compensation with Remote Control
When the Remote Controller "**RC**" is connected to the unit, the compensation of the supply water temperature "**TD**" or "**TDC**" is enabled.
The compensation is obtained taking into account the new value of the Comfort or Economy temperature, "**TC**" or "**TR**", calculated on the basis of the value set on the Remote controller. The Remote Controller allows the variation of the Comfort or Economy temperature set in a range between ± **5**°C.
For example, if the Comfort temperature "**TC**" has been set to 20°C and on the Remote Controller a value of +2°C is selected, the new Comfort value will be 22°C.

Warning:
- If the value of "**TD**" or "**TDC**" resulting from the calculation exceeds the maximum value allowed for the supply temperature, the value of "**TD**" or "**TDC**" will be automatically limited to the value of "**TDM**", settable by means of the installer parameter **P2**.
- If the Remote Controller is not connected, the function is disabled and the "**RC**" icon will not appear on the display.

ADJUSTMENT OF A MIXING VALVE WITH 3-POINT SERVO MOTOR AND CIRCULATION PUMP

If the heating system features a mixing valve with a three-point servo motor, the mixing valve is driven for a proportional time "**ton**" calculated considering the difference between the calculated supply water temperature "**TD**" and the supply water temperature measured by the probe "**Td**".
This time will be a maximum of 10 seconds if a 3-5 minute servo motor is used, whereas it will be a maximum of 20 seconds if a 6-10 minute servo motor is used.
The activation time is followed by a fixed waiting time equal to approximately 10 seconds in order to thermally stabilize the system.
The adjusting proportional band "**Bp**" has a range of ±10°C, compared to the calculated supply water temperature, whereas the range of the resting proportional band "**Br**" is of ±2°C, yet again compared to the calculated supply water temperature "**TD**" or compensated with the ambient temperature "**TDC**".

LEGEND:

TD:	Calculated supply water temperature
TDC:	Compensated supply water temperature
Td:	Measured supply water temperature
I max:	Maximum opening / closing pulse determined by the type of servo motor set
ton:	Duration of the closing and opening pulse
tof:	Duration of the waiting pulse
Bp:	Adjusting proportional band
Br:	Resting proportional band

Maximum opening/closing pulse ("I max") of the servo motor
The maximum pulse has a fixed duration and it is determined by the type of servo motor set in the parameter "TYP". This value is the time that the servo motor takes to perform a complete opening or closing:

3-5 minute servo motor (I max = 6 minutes)

6-10 minute servo motor (I max = 11 minutes)

Calculation of the duration of the Opening and Closing pulse ("ton") of the servo motor

Open command: if **Td** < **TD** **or** if **Td** < **TDC**.
Close command: if **Td** ≥ **TD** **or** if **Td** ≥ **TDC**.

The unit calculates the time depending on the type of servo motor used.

3-5 minute servo motor

maximum ton = 10 seconds

6-10 minute servo motor

maximum ton = 20 seconds

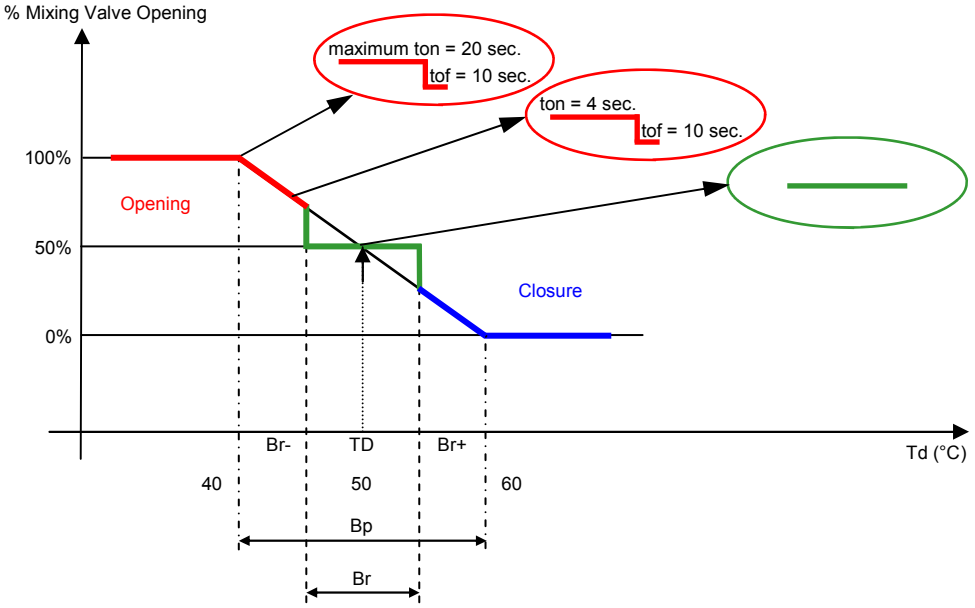
Calculation of the waiting pulse ("tof") of the servo motor
The waiting pulse, that has the aim to thermally stabilize the system, has a fixed duration, independent of the servo motor used, equal to:

tof = 10 seconds

Circulation pump control
The circulation pump in the configuration with servo motor will always remain active, unless the unit is turned "**OFF**".

Adjustment of the Comfort/Economy temperature depending on the external temperature
If the set temperature, Comfort or Economy, even corrected by the value set on the Remote Control, is less than the value of the external temperature, the unit will not adjust it and the servo motor will be closed with a pulse equal to the maximum, "I max" (adjustment for heating systems where the supply water temperature "**Td**" cannot be less than the external temperature "**Te**").

Sample diagram of the activation of a mixing valve with a 3-point, 6-10minute servo valve



Note: chart not to scale.

ADJUSTMENT WITH SINGLE OR TWO STAGE BURNERS

The climate regulator manages burners with one or two stages. In the latter case, the burners operate for most of the days during which heating is needed on the first stage (base load). In the case of low outside temperatures that directly affect the supply water temperature, the burner switches to the second stage (greater heating). The system adapts instantly to the new heat demand.
This two stage technology guarantees an optimal adjustment of the burner to external weather conditions.

LEGEND:

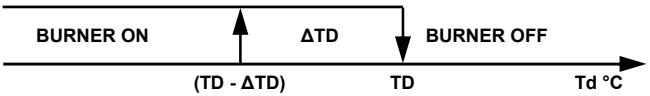
TD: calculated supply water temperature
ΔTD: hysteresis of the burner
TDC: compensated supply water temperature
Td: measured supply water temperature
tb1: minimum ignition time of burner 1, set in the parameter "tb1"
tb2: minimum ignition time of burner 2, set in the parameter "tb2"
to1: minimum extinction time of burner 1, set in the parameter "to1"
to2: minimum extinction time of burner 2, set in the parameter "to2"

SINGLE-STAGE BURNER

Flame adjustment

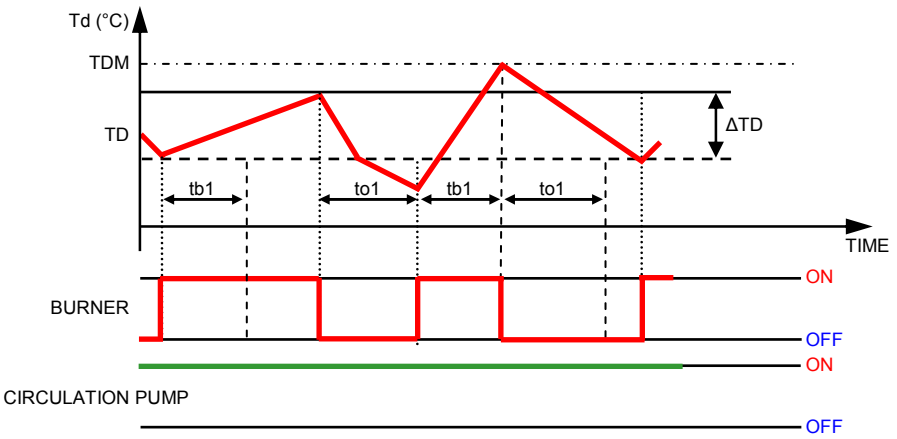
Burner **ON** if **Td** ≤ (**TD** - **ΔTD**) => Minimum ignition time of burner 1 = **tb1**.

Burner **OFF** if **Td** ≥ **TD** => Minimum extinction time of burner 1 = **to1**.



Note:
If compensation is made by means of the ambient temperature probe, insert the value TDC instead of TD.

Activation chart as a function of time



Circulation pump control
The circulation pump will always be on, unless the unit is switched "**OFF**".

TWO-STAGE BURNER

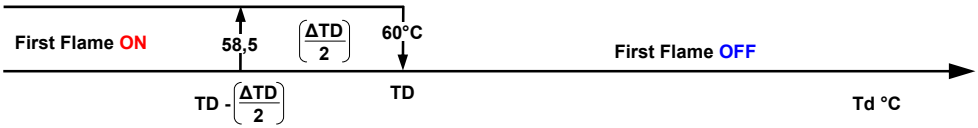
By using a burner with two separate stages, the adjustment of the two flames is carried out separately.

Adjustment of first flame

The value of the activation differential of the first flame is equal to the value set in the parameter "**ΔTD**" divided by 2, Therefore we get:

First Flame **ON** if **Td** ≤ TD - $\left(\frac{\Delta TD}{2}\right)$ => Minimum activation **tb1** (in sec.)

First Flame **OFF** if **Td** ≥ TD => Minimum deactivation **to1** (in sec.)



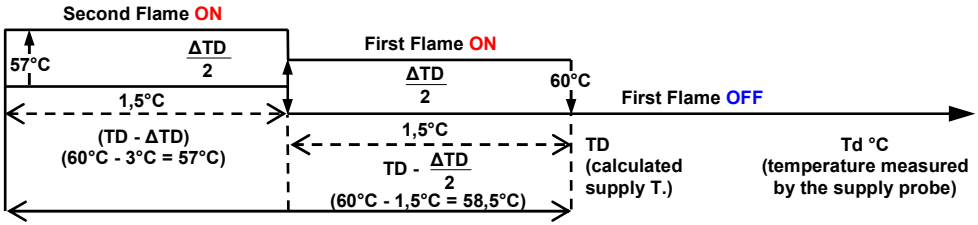
Example **ΔTD = 3°C set in the installer parameter "burner hysteresis"**
TD = Supply temperature calculated by the unit, for example 60°C.
$\frac{\Delta TD}{2}$ (3°:2) = 1,5°C 60°C - 1,5 = 58,5°C **first flame ON**

Adjustment of second flame

The second stage of the burner is activated only if the external temperature goes below a certain value, since the external temperature directly affects the supply temperature, causing it to drop. The activation differential of the second flame is equal to the value set in parameter "ΔTD", whereas for deactivation the value ΔTD/2 is considered. In particular we get:

Second Flame **ON** if **Td** ≤ (TD - ΔTD) => Minimum activation **tb2** (in sec.)

Second Flame **OFF** if **Td** ≥ TD - $\left(\frac{\Delta TD}{2}\right)$ => Minimum deactivation **to2** (in sec.)



Circulation pump control

The circulation pump will always be on, unless the unit is switched "**OFF**".

⚠ WARNING

When managing the burners, both with one stage and with two stages, the following considerations must be taken into account.

Minimum ignition and extinction time of the burners

To avoid that ignitions and extinctions of the burners are too short and cause them to get blocked, set the minimum ignition and extinction time of the burners.
For the appropriate time, refer to the manual or the manufacturer of the boiler and set them using the dedicated installer parameters **P2: "tb1"**, **"to1"** and **"tb2"**, **"to2"**.

Adjustment of burners and pumps in the event that the unit is switched OFF

When the unit is switched off, the burner turns off and after the "pump OFF delay" time set in the installer parameter **P2** - "**DEL**", the circulation pump is deactivated.

Intervention of the minimum time, exceeded TD

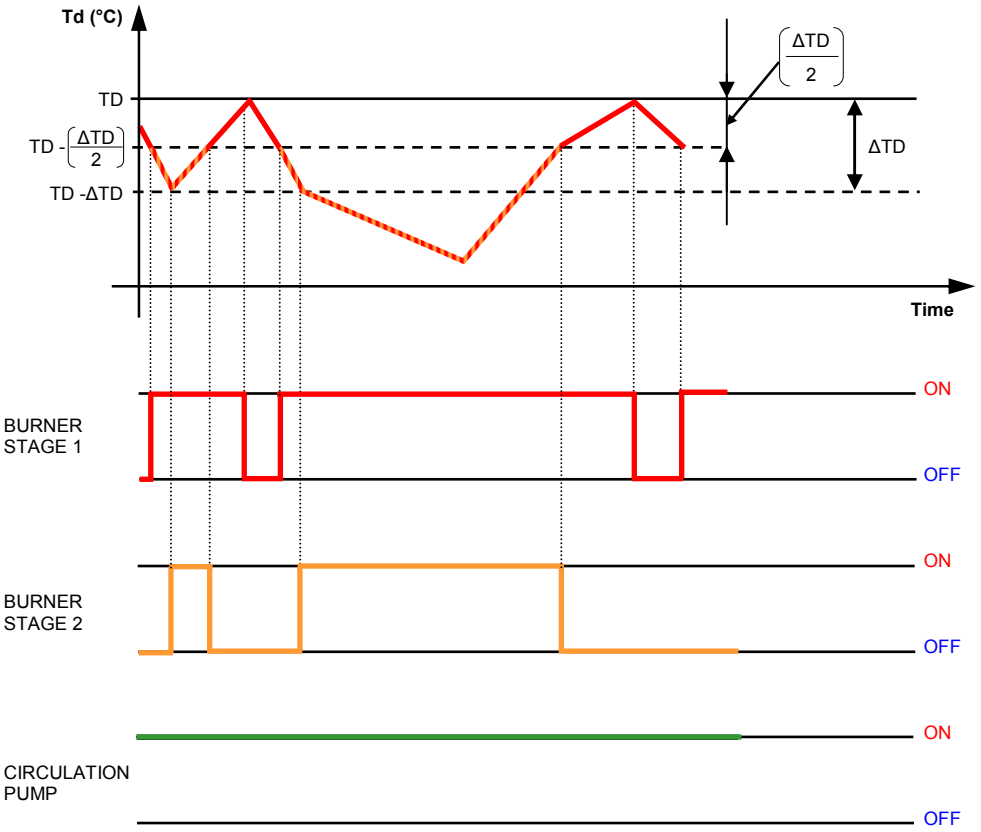
As a result of the presence of a minimum ignition time for the burner "**tb1" or "tb2**", the calculated supply water

temperature "**TD**" or the compensated supply water temperature "**TDC**" maybe exceeded.

Therefore, the values of "**tb1" or "tb2**", "**to1" or "to2**", **TD**, and **TDM** must be set in a manner that is appropriate to the characteristics of the system.
If you want to avoid exceeding the **TD**, you must set the value of **tb1** to the minimum. This, however, is not recommended because it may cause the burners to get blocked; the minimum settable value must be verified considering the characteristics of the burner.

Anti-condensation function of burner
The easiest and least expensive way to prevent the formation of condensation in the boiler is t control the temperature detected by the return water temperature "**Tr**".
This function will be activated if the probe "**Tr**" has been connected to the unit and if the value of the anti-condensation temperature, set in the dedicated installer parameter in **P2** - "**TAC**", will be different from **OFF**.
If the probe "**Tr**" has not been connected, the icon "**Tr**" and the circuit of the **recirculation pump** will not appear in the hydraulic diagram on the display.
On the contrary, if the probe has been connected, but the value of "**TAC**" has been set to **OFF**, the icon "**Tr**" and the circuit of the **recirculation pump** will flash.
To prevent the formation of condensation in the boiler, the temperature controlled by the probe "**Tr**", must always remain above **55**°C.
If a reasonable value is set for the minimum temperature of the supply water "**TDL**", the anti-condensation function is carried out indirectly by the normal adjustment and conservation of that parameter.
In a climate control system, the activation of the anti-condensation function may occur in two different situations:
1) Upon start-up or after being off during the night.
2) During normal operation after changes in the thermal load.
In both cases, the behaviour is the same.

Activation chart as a function of time



ANTICONDENSATE FUNCTION

The anticondensate function, if enabled, allows to maintain, for the entire time that the system is managed, the return water temperature in the boiler at the desired value, in order to avoid condensation.
With the use of the temperature probe, "**Tr**", the conservation of the return water temperature at the value set for the anti-condensation temperature "**TAC**" (installer parameter **P4**) is guaranteed, with no significant deviations.
Maintaining the minimum temperature of the return water at a constant value does not affect the operating time of the system.
Avoiding the condensation of the fumes inside the boilers is needed to prevent the rapid deterioration of the boilers themselves due to the fact that the condensation of the fumes is very acidic la (the water binds with the sulphur and forms sulphuric acid) and can easily attack the boiler body, until it is unusable.
The only boilers immune from these dangers are those that use condensation for energy optimization.
Normal boilers, not designed to exploit the latent heat of vaporization, need to be protected with devices that are able to prevent the return water temperature from dropping below 55÷60°C. In fact, if the return water temperature is below 55°C the fumes condense in the boiler.
The "Anticondensate Pump" has the aim to send part of the warm supply water directly to the return circuit, so as to increase the return water temperature more quickly.
A good adjustment depends on the exact dimensioning of the anticondensate pump and of the system itself, as well as the use of a boiler with suitable characteristics and with all its thermal data correctly set.

System with 3-point servo motor:

If **Tr** ≤ **TAC**: - The servo motor will be closed with a pulse equal to Imax, so that the flow is conveyed towards the return.
- Activation of the anticondensate pump.

If **Tr** ≥ (**TAC** + **HYS**): - The servo motor can be opened/closed, as in climate adjustment
- Deactivation of the anticondensate pump.

System with a single or two-stage burner:

If **Tr** ≤ **TAC**: - Activation of the burner.
- Activation of the anticondensate pump.

If **Tr** ≥ (**TAC** + **HYS**): - The burner will be controlled as in climate control.
- Deactivation of the anticondensate pump.

ANTI-FREEZE FUNCTION

The anti-freeze function, if enables, allows to maintain the supply water temperature at the desired value, to prevent the freezing of the piping.
With the use of the temperature probe, "**Td**", the conservation of the supply water temperature at the value set for the anti-freeze temperature "**TAF**" (installer parameter **P2**) is guaranteed, with no significant deviations.
The activation of the function is signalled by the anti-freeze icon "❄" appearing on the display.

System with 3-point servo motor:

If **Td** ≤ **TAF**: - The servo motor will be opened with a pulse equal to Imax.
- If **OFF**, the circulation pump will be activated.

If **Td** ≥ (**TAf** + **HYS**): - The servo motor will be controlled as in climate control associated to the logic of active operation.
- The circulation pump will be controlled as in climate control associated to the logic of active operation.

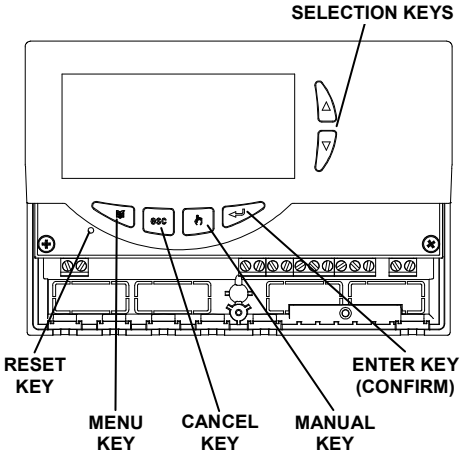
System with a single or two-stage burner:

If **Td** ≤ **TAF**: - Activation of the first stage of the burner.
- If **OFF**, the circulation pump will be activated..

If **Td** ≥ (**TAf** + **HYS**): - The burner will be controlled as in climate control associated to the logic of active operation.
- The circulation pump will be controlled as in climate control associated to the logic of active operation.

START-UP

DESCRIPTION OF CONTROLS



SEQUENCE OF OPERATIONS TO BE PERFORMED FOR THE CORRECT START-UP OF THE RKP CLIMATE CONTROL UNIT

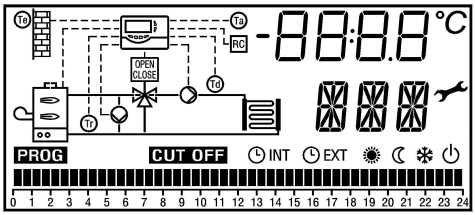
Functional features of the keys;

↵	Confirm
Esc	Exit
mano	Comfort constant until 24:00
▲	Scroll menu up
▼	Scroll menu down
	Menu

- Perform the electrical connections correctly according to the chosen diagram.
- Turn on the unit by pressing and holding the "Esc" button for at least 3 seconds.
- Press the "↵" key once and insert password (default password 0000)
- Press the "↵" key 4 times to confirm the original password "0000" (To change the password see the paragraph "change password").
- The initials SCH will appear (diagrams) "P1" (parameter 1). To select the chosen hydraulic diagram, press the "↵" key again, then use the arrows "▲" and "▼" to scroll through the 4 hydraulic diagrams suggested.
- Pres the "↵" key to confirm, or press "Esc" to cancel the selection.

DISPLAY INFORMATION

The following image shows the display with all the segments on:



Display hydraulic diagram:

Ta Te Td Tr	**Probe icon.** Icon on: probe present Icon + symbol ' flashing: probe faulty or not connected (if required as **Te** and **Td**) Icon off: probe not present
	Circulation pump: Symbol on: pump off Symbol flashing: pump on. Symbol off: pump not needed for the current setting.
	Valve with 3-point servo motor: The word 'OPEN' on: servo motor opening The word 'CLOSE' on: servo motor closing The word "OPEN"/"CLOSE" off: servo motor off

Display additional information:

INT	Enable control via internal chronothermostat
EXT	Enable control via External Contact
	Temperature control in Comfort mode
	Temperature control in Economy mode
	Thermostat off, OFF mode
	Anti-freeze mode on, the thermostat controls the anti-freeze temperature
	1 / 2 stage burner ON/OFF: Flame flashing: Burner on Flame on: Burner off
	There is a fault in the system
PROG	The climate regulator is in Programming mode
CUT OFF	Icon on: the CUT-OFF function has been enabled Icon off: the CUT-OFF function is not enabled

SWITCHING ON AND OFF

To turn the unit on and off press and hold the ' **esc** ' key for at least 3 seconds.
When turned on, the unit will make a diagnosis of the internal circuit to check that it works correctly and the red LED will flash 3 times.
If the unit does not detect any faults, the red LED will remain lit; otherwise the red LED will flash rapidly and the type of error will appear on the display.
When turned off, the word '**OFF**' is displayed.

DISPLAY TEMPERATURE / CLOCK

The unit is able to show on the alphanumeric display the current time and date and the temperatures detected by the various probes connected.
By using the keys '▲' and '▼' you can scroll through the data provided.

Example of clock displayed:
10:**53** (hour:minutes)
Mon (day of the week)

Example of temperature displayed:
20.0°C (temperature expressed in degrees centigrade)
T_x (probe connected measuring temperature - **Te**, **Td**, **Tr**, **Ta**)

STATUS OF OUTPUTS

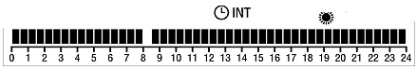
The outputs **OUT 1**, **OUT 2**, **OUT 3** and **PUMP** relative to the loads connected to the unit in the status "**FAULT**", will be **N**.**O**. (normally open).
When normal operation is restored, the unit may control the output of the servo motor during closing for a pulse equal to the maximum, that is **6** minutes or **11** minutes depending on the type of servo motor used.
This function aims to restore the servo motor in safety position (closing and consequently a lowering of the supply temperature). With the servo motor back in place, the unit will resume normal operation.
When the unit is off, the word "**OFF**" will be displayed. If the anti-freeze function has been activated, the icon "❄" will be displayed and the unit will adjust the ambient temperature according to the anti-freeze temperature set.

MANUAL 24h SETTINGS

With the "✋" key, the unit can be forced to adjust the ambient temperature regardless of the time settings, according to the comfort temperature set.
By pressing the "✹" key repeatedly, the unit goes from Automatic to Manual 24h mode and vice versa.
During operation in "Manual 24h" the symbol " ✋ " will be displayed and all the segments of the time setting will be on (a flashing segment indicated the current time).
By pressing the "✋" key once, Manual 24h mode is activated and the climate control unit remains in manual mode until 23:59, after which operation according to the program previously set in the parameter "**SFM U1**" is restored.
The function "**MANUAL 24h**" cannot be activated if the unit is operating in "**COMF**" mode, settable in the parameter "**SFM U1**".

Display Manual 24h mode

The unit adjusts the ambient temperature, in comfort mode, until 23:59.
After which the program previously set in the parameter "**SFM U1**" is restored.



The flashing segment indicates the current time

RESET

To reset the device press the " RESET " key located under the removable; **DO NOT USE NEEDLES**.

INSTALLER PARAMETERS

Enter password

To access the installer parameters, proceed as follows:

```
PRESS THE ' ↵ ' KEY.
⇩
'0000  PWD' IS DISPLAYED WITH THE
FIRST DIGIT ON THE LEFT FLASHING.
⇩
ENTER THE PASSWORD.
ENTER THE 4 DIGITS OF THE PASSWORD
USING THE ARROWS '▼' AND '▲'.
PRESS THE ' ↵ ' KEY TO CONFIRM
THE DIGIT INSERTED AND TO
SELECT THE NEXT ONE AND SO ON
UNTIL THE LAST ONE.
BY CONFIRMING THE LAST DIGIT WITH
THE ' ↵ ' KEY, YOU WILL ACCESS
THE INSTALLER PARAMETERS.
```

Note: the default password of the unit is '0000'.

Change password

Of you want to change the password, proceed as follows:

```
PRESS THE ' ↵ ' KEY.
⇩
PRESS THE ' ▤ ' KEY.
'0000 PW0' WILL BE DISPLAYED.
⇩
ENTER THE CURRENT PASSWORD.
Same procedure as before.
⇩
'0000  PW0' IS DISPLAYED.
⇩
ENTER THE NEW PASSWORD.
⇩
'0000  PW0' IS DISPLAYED.
⇩
ENTER THE NEW PASSWORD.
⇩
THE UNIT SAVES THE NEW PASSWORD
AND ACCESSES THE
INSTALLER PARAMETERS.
```

Press the '**esc**' key to exit password management in any moment.

Using installer parameters

```
ONCE THE CORRECT PASSWORD HAS BEEN
ENTERED, THE FIRST INSTALLER
PARAMETER IS DISPLAYED
⇩
USING THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH THE
INSTALLER PARAMETERS.
⇩
```

Note: the installer parameters are 6 and they are described in detail below:

"P1 SCH" Select system type

"P2 DAT" Set system data

- **KS**: External temperature compensation coefficient
- **KA**: Ambient temperature compensation coefficient
- **TYP**: Type of servo motor used
- **TDM**: Maximum supply temperature
- **TDL**: Minimum supply temperature
- **HYS**: Hysteresis of the thermostats
- **ΔTD**: Hysteresis of the burners
- **TAL**: Pump anti-locking time
- **DEL**: Pump OFF delay
- **PRI**: Internal or external chronothermostat

"P3 OAF" Set anti-freeze temperature

- **TAF:** Set anti-freeze temperature

"P4 OAC" Set anti-condensation temperature

- **KS**: Set anti-condensation temperature

"P5 OCO" Se cut-off temperature referred to the external probe

- **TCO**: Set external probe CUT-OFF temperature

"P6 OFS": Set offset of the probes

- **OFE**: Set external probe "Te" OFF-SET
- **OFD**: Set supply probe "Td" OFF-SET
- **OFR**: Set return probe "Tr" OFF-SET
- **OFA**: Set ambient probe "Ta" OFF-SET

```
⇩
PRESS THE ' ↵ ' KEY TO CHANGE
THE SELECTED PARAMETER.
⇩
CONFIGURE THE DATA RELATIVE TO EACH
PARAMETER, AS ILLUSTRATED
BELOW.
⇩
PRESS THE 'esc' KEY TO GO BACK
TO THE SELECTION OF THE
INSTALLER PARAMETERS.
⇩
WAIT 20 SECONDS OR PRESS THE 'esc' KEY
TO EXIT INSTALLER MODE.
```

WARNING!

- **In "installer parameters" mode all the outputs are disabled.**
- **All the default values indicated are to be considered approximate and can vary depending on the version and without notice.**
- **The unit is supplied with the thermal data preset for optimal operation. Only qualified personnel should change these .**
- **The display of the data to be set depends on the diagram selected, that is the unit displays only the data relative to the hydraulic diagram selected.**

"P1 SCH"

SELECT SYSTEM TYPE

With this parameter you can select the type of hydraulic system to be made.
The unit offers the opportunity to select four different hydraulic diagrams.

```
SELECT THE PARAMETER'P1 SCH'
PRESS THE ' ↵ ' KEY;
THE ACTIVE HYDRAULC DIAGRAM WILL BE
DISLAYED ALONG WITH THE LETTERS 'SCH'
FLASHING.
```

⇩

```
USING THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH
THE FOUR HYDRAULIC DIAGRAMS AVAILABLE.
```

⇩

Note: below are the main characteristics of each hydraulic diagram. For further details see the paragraph 'INSTALLATION'.

⇩

```
PRESS THE ' ↵ ' KEY TO CORFIRM
THE SETTINGS OR PRESS THE 'esc' KEY
TO CANCEL.
```

Hydraulic diagrams available:

01 SCH:
*Heating system with the control of a 3-point servo motor and a circulation pump. Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (*neither have to be connected).

02 SCH:
Heating system with the control of a 3-point servo motor, a circulation pump, an anticondensate pump and a return water temperature probe.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).

03 SCH:
Heating system with the 2-point control (ON/OFF) of a single stage burner and a circulation pump.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).

04 SCH:
Heating system with the control of a two-stage burner and a circulation pump.
This diagram provides for the use of the recirculation pump and the return probe -.Tr.
Possibility of compensation by means of a "Ta" probe and/or a remote control "RC" (neither have to be connected).

"P2 DAT"
SYSTEM DATA SETTINGS

With this parameter you can set all the data that influence the management of the hydraulic system.

```
ONCE YOU HAVE SELECTED THE 'P2 DAT'
   PARAMETER, PRESS THE ' ↵ ' KEY.
```

⇩

```
USING THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH
 THE FOURTEEN ELEMENTS AVAILABLE.
```

⇩

Note: below are the details of the data available.

⇩

```
PRESS THE ' ↵ ' KEY TO MODIFY
    THE ELEMENT SELECTED.
 THE ELEMENT BEGINS TO FLASH.
```

⇩

```
SET THE DESIRED VALUE
USING THE ARROWS '▼' AND '▲'.
```

⇩

```
PRESS THE ' ↵ ' KEY TO CONFIRM
     THE SETTINGS OR
 PRESS THE 'esc' KEY TO CANCEL.
```

EXTERNAL TEMPERATURE COMPENSATION COEFFICIENT		
Data	Adjustment range	Default
KS	0.5 .. 5	2.0

*Note: this parameter determines the speed of response of the entire system on the basis of the changes in the outside temperature detected by the probe "**Te**".*

For more details, see the paragraph "Operating principles of the climate regulator" on page 14.

AMBIENT TEMPERATURE COMPENSATION COEFFICIENT		
Data	Adjustment range	Default
KA	0.5 .. 5	2.0

*Note: this parameter determines the compensation coefficient depending on the ambient temperature detected by the probe "**Ta**".*

For more details, see the paragraph "Operating principles of the climate regulator - Compensation with ambient temperature" on page 14.

TYPE OF SERVO MOTOR USED		
Data	Adjustment range	Default
TYP	3 .. 5 min. 6 .. 10 min.	3 .. 5 min.

MAXIMUM TEMPERATURE OF SUPPLY WATER		
Data	Adjustment range	Default
TDM	OFF 95.0 .. 10.0 °C	OFF

Note: this parameter defines the maximum temperature of the supply water.
*The value of **TDM** cannot be set at a value below that of **TDL** + **5**°C.*
*To disable this function, set the parameter to "**OFF**".*

MINIMUM TEMPERATURE OF SUPPLY WATER		
Data	Adjustment range	Default
TDL	OFF 5.0 .. 90.0 °C	OFF

Note: this parameter defines the minimum temperature of the supply water.
*The value of **TDL** cannot be set at a value above that of **TDM** - **5**°C.*
*To disable this function, set the parameter to "**OFF**".*

HYSTERESIS OF THE THERMOSTATS		
Data	Adjustment range	Default
HYS	not adjustable	1.0°C

HYSTERESIS OF THE BURNER		
Data	Adjustment range	Default
ΔTD	0.5 .. 25.0 °C	3.0°C

HYSTERESIS OF THE ANTI-CONDENSATION THERMOSTATAT		
Data	Adjustment range	Default
HYS	0.5 .. 10.0 °C	1.0°C

PERIODIC ACTIVATION OF THE CIRCULATION PUMP		
Data	Adjustment range	Default
TAL	OFF 5 .. 240.0 sec.	OFF

*Note: With the parameter "**TAL**" it is possible to select the interval, in seconds, to activate the circulation water pump in order to prevent it from getting blocked.*
*The circulation pump, if the parameter "**TAL**" is enabled, will be activated every 23 hours if there have not been previous activations.*
*To disable this function, set the parameter to "**OFF**".*

CIRCULATION PUMP OFF DELAY		
Data	Adjustment range	Default
DEL	OFF 1 .. 30 min.	OFF

Note: With this parameter, if enabled, it is possible to set the time, in minutes, of delay for the circulation pump to turn off in order to avoid sudden start-ups.
*To disable this function, set the parameter to "**OFF**".*

MINIMUM IGNITION BURNER 1		
Data	Adjustment range	Default
tb1	OFF 1 .. 250 sec.	60 sec.

*To disable this function, set the parameter to "**OFF**".*

MINIMUM EXTINCTION BURNER 1		
Data	Adjustment range	Default
tO1	OFF 1 .. 250 sec.	60 sec.

*To disable this function, set the parameter to "**OFF**".*

MINIMUM IGNITION BURNER 2		
Data	Adjustment range	Default
tb2	OFF 1 .. 250 sec.	60 sec.

Note: It is not possible to set the value of tb2 to a value higher than the value of tb1, because the value of tb2 is limited to the value of tb1.
If you want to increase the value of tb2, you must increase the value of tb1 first, according to the relation: tb2 ≤ tb1.
*To disable this function, set the parameter to "**OFF**".*

MINIMUM EXTINCTION BURNER 2		
Data	Adjustment range	Default
tO2	OFF 1 .. 250 sec.	60 sec.

Note: It is not possible to set the value of to2 to a value lower than the value of to1, because the value of tb2 is limited to the value of to1.
If you want to decrease the value of to2, you must decrease the value of to1 first, according to the relation: to2 ≥ to1.
*To disable this function, set the parameter to "**OFF**".*

ADJUSTMENT ON INTERNAL CHRONOTHERMOSTAT (INt) OR ON EXTERNAL CONTACT (EHt)		
Data	Adjustment range	Default
PRI	INT .. EHt	INt

Note: Setting the parameter to "EXT", external contact, will make the icon "EXT" light up on the display, whereas setting the parameter to "INT", adjustment according to the program inside the unit, will make the icon "INT" light up on the display.

"P3 OAF"
SETTING ANTI-FREEZE TEMPERATURE

This parameter allows you to set the anti-freeze temperature to protect the system if the supply water temperature drops below the value set.
To disable this function, set the parameter to "**OFF**".

```
AFTER SELECTING THE PARAMETER 'P3 OAF'
      PRESS THE ' ↵ ' KEY.
 THE ELEMENT 'TAF' WILL BE DISPLAYED;
    THEN PRESS THE '↵  'KEY AGAIN;
  'TAF' WILL FLASH ON THE DISPLAY.
```

⇩

```
SET THE DESIRED VALUE
BY USING THE ARROWS '▼' AND '▲'.
```

⇩

```
PRESS THE ' ↵ ' KEY TO CONFIRM
THE SETTINGS OR PRESS THE 'esc' KEY
          TO CANCEL.
```

ANTI-FREEZE TEMPERATURE		
Data	Adjustment range	Default
TAF	OFF 1 .. 40 °C	5 °C

*To disable this function, set the parameter to "**OFF**".*

"P4 OAC"
SETTING ANTI-CONDENSATION TEMPERATURE

This parameter allows you to control the temperature detected by the probe "**Tr**" (return water temperature probe) so as to avoid the formation of condensation in the boiler.
To disable this function, set the parameter to "**OFF**".
For more details see the paragraph "Adjustment with single or two stage burners'.

AFTER SELECTING THE PARAMETER 'P4 OAC'
PRESS THE ' ↵ ' KEY.
THE ELEMENT 'TAC' WILL BE DISPLAYED;
PRESS THE ' ↵ ' KEY AGAIN;
TAC' WILL FLASH ON THE DISPLAY.

⇩

SET THE DESIRED VALUE
BY USING THE ARROWS '▼' AND '▲'.

⇩

PRESS THE ' ↵ ' KEY TO CONFIRM
THE SETTINGS OR PRESS THE 'esc' KEY
TO CANCEL.

ANTI-CONDENSATION TEMPERATURE		
Data	Adjustment range	Default
TAC	OFF 10.0 .. 95.0 °C	60 °C

To disable this function, set the parameter to "**OFF**".

"P5 OCO"
SETTING THE CUT-OFF TEMPERATURE REFERRED TO THE EXTERNAL PROBE

This parameter, if enabled, allows for the system to be turned off when the temperature detected by the probe Te (external temperature probe) exceeds the value set in the parameter "**TCO**".
To disable this function, set the parameter to "**OFF**".

AFTER SELECTING THE PARAMETER 'P5 OCO'
PRESS THE ' ↵ ' KEY.
THE ELEMENT 'TCO' WILL BE DISPLAYED;
PRESS THE ' ↵ ' KEY AGAIN
'TCO' WILL FLASH ON THE DISPLAY.

⇩

SET THE DESIRED VALUE
BY USING THE ARROWS '▼' AND '▲'.

⇩

PRESS THE ' ↵ ' KEY TO CONFIRM
THE SETTINGS OR PRESS THE 'esc' KEY
TO CANCEL.

CUT-OFF TEMPERATURE		
Data	Adjustment range	Default
TCO	OFF 10.0 .. 50.0 °C	OFF

*Ti disable this function, set the parameter to "**OFF**".*

"P6 OFS"

SETTING OFFSET OF THE PROBES

With this parameter it is possible to change the temperature detected by the connected probes, by ±5° C, so as to correct any systematic reading errors.

```
AFTER SELECTING THE PARAMETER 'P6 OFS'
      PRESS THE ' ↵ ' KEY;
              ⇩
   WITH THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH
   THE FOUR ELEMENTS AVAILABLE.
              ⇩
  PRESS THE ' ↵ ' KEY TO CHANGE
       THE SELECTED ELEMENT.
THE ELEMENT WILL BEGIN TO FLASH.
              ⇩
    SET THE DESIRED VALUE
USING THE ARROWS '▼' AND '▲'.
              ⇩
 PRESS THE ' ↵ ' KEY TO CONFIRM
       THE SETTINGS OR
 PRESS THE 'esc' KEY TO CANCEL
```

OFFSET OF THE PROBES

Data	Adjustment range	Default
OFE	-5.0 .. +5.0 °C	0
OFD	-5.0 .. +5.0 °C	0
OFR	-5.0 .. +5.0 °C	0
OFA	-5.0 .. +5.0 °C	0

Note: *OFE = Offset on probe Te*
OFD = Offset on probe Td
OFR = Offset on probe Tr
OFA = Offset on probe Ta

USER PARAMETERS

The functions that can be accessed by the user are limited and do not allow for the configuration of data that influences the management of the system.

```
PRESS THE ' 📖 ' KEY.
          ⇩
THE FIRST USER PARAMETER
     IS DISPLAYED.
          ⇩
   WITH THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH
   THE FIVE USER PARAMETERS.
          ⇩
 PRESS THE '↵' KEY TO ENTER
   THE SELECTED PARAMETER.
          ⇩
 SET THE DATA RELATIVE TO EACH
      PARAMETER, AS SHOWN
           BELOW.
          ⇩
 PRESS THE 'esc' KEY TO GO BACK
TO THE SELECTION OF USER PARAMETERS.
          ⇩
    TO EXIT THIS MENU, PRESS
     THE 'esc' KEY AGAIN OR
 WAIT 20 SECONDS WITHOUT PRESSING
          ANY KEYS.
```

Below are the details of the user parameters.

WARNING!

- All the default values indicated are to be considered approximate as they may vary depending on the version and without notice.

"U1 SFM" - Selecting the Mode of Operation

This parameter allows you to select the mode of operation of the unit:

```
AFTER SELECTING THE PARAMETER 'U1 SFM'
    PRESS THE ' ↵ ' KEY TWICE;
  THE LETTERS 'SFM' WILL FLASH.
```

⇩

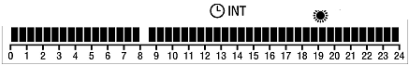
```
    WITH THE ARROWS '▼' AND '▲'
IT IS POSSIBLE TO SCROLL THROUGH
   THE FOUR MODES OF OPERATION.
```

⇩

- '**COMF**': Comfort 24h mode.

Display during normal operation

Permanent exclusion of the program "COMF", comfort 24h mode



The flashing segment indicates the current time

- '**ECON**': Economy 24h mode.

Display during normal operation

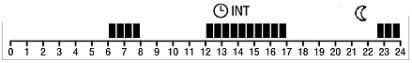
Permanent exclusion of the program "ECON", Economy 24h mode

The flashing segment indicates the current time

- '**Pr-1**': Automatic Comfort-Economy mode (depending on the parameter 'U3 PRG').

Display during normal operation

In the ***comfort time slots*** the unit will adjust the temperature according to the comfort temperature set "**TC**", whereas during ***Economy time slots*** it will adjust the temperature according to the Economy temperature set



The flashing segment indicates the current time

- '**Pr-2**': Automatic Comfort-Off or Anti-freeze mode (depending on the parameter 'U3 PRG').

Display during normal operation

In the ***comfort time slots*** the unit will adjust the temperature according to the comfort temperature set "**TC**", whereas during ***Economy time slots*** it will be switched off or, if the anti-freeze function is enabled, it will adjust the temperature according to the anti-freeze temperature set "P3 OAF".

The flashing segment indicates the current time

⇩

```
PRESS THE ' ↵ ' KEY TO CONFIRM
      THE SETTINGS OR
PRESS THE 'esc' KEY TO CANCEL.
```

Table 1: Mode of operation depending on the settings of parameter U1

Status	Parameter U1	Status management	Adjustment level					Optional functions	
			Sun	Moon	Off or Anti-freeze			Cut-Off (✓ if enabled)	Anti-condensation (✓ if enabled)
					Status Anti-freeze	Off	Anti-freeze		
OFF	--	Manual	✗	✗	Anti-freeze disabled	✓	✗	✗	✗
					Anti-freeze enabled	✗	✓	✗	✓
ON	COMF	Manual	✓	✗		✗	✗	✓	✓
	ECON	Manual	✗	✓		✗	✗	✓	✓
	PR-1	Schedule	✓	✓		✗	✗	✓	✓
	PR-2	Schedule	✓	✗	Anti-freeze disabled	✓	✗	✗	✗
					Anti-freeze enabled	✗	✓	✗	✓

"U2 MDY"

Date and time settings

This parameter allows you to adjust the date and time.

WARNING!

- **The device manages the date for leap years automatically.**
- **If the summer time/winter time adjustment is active, but there is a power cut between 1:59:59 and 2:00:00, the transition from summer time to winter time and vice versa may not be carried out.**
- **The settings will be saved only after pressing the '↵' key in the last parameter available 'MEMO CLK'.**
- **If you exit this parameter before managing the last parameter 'MEMO CLK' or if the timeout expires, the settings will not be saved.**

AFTER SELECTING THE PARAMETER 'U2 MDY'
PRESS THE ' ↵ ' KEY;
THE LETTERS 'HH' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE CURRENT TIME.

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'MM' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE MINUTES.

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'DWK' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE DAY OF THE WEEK
(1 Monday .. 7 Sunday).

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'DAY' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE DAY (1..31)

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'MTH' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE DAY (1..12)

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'YEA' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE YEAR (1..99).

⇩

PRESS THE ' ↵ ' KEY;
THE LETTERS 'S-L' WILL FLASH.

⇩

USING THE ARROWS '▼' AND '▲'
YOU CAN SET THE TRANSITION FROM WINTER
TIME TO SUMMER TIME AND VICE VERSA:
No: THE TRANSITION WINTER/SUMMER
TIME IS NOT CARRIED OUT
Aut: THE TRANSITION WINTER/SUMMER
TIME IS CARRIED OUT
AUTOMATICALLY.

⇩

PRESS THE ' ↵ ' KEY;
THE WORD 'MEMO' WILL APPEAR ON THE
DISPLAY WITH 'CLK' FLASHING.

⇩

PRESS THE '↵' KEY AGAIN.
THE UNIT SAVES THE SETTINGS
AND THE SCREEN RELATIVE TO THE
TIME SETTINGS IS DISPLAYED
(TIME UPDATED)
WITH THE LETTERS 'HH'
FLASHING.

⇩

PRESS THE 'esc' KEY TO GO BACK
TO THE SELECTION OF USER PARAMETERS.

"U3 PRG"

Setting the timer

This parameter, accessible only if the parameter '***U1***' is set to '**Pr-1**' or to '**Pr-2**', allows you to set the timer.
Usually the dashes at the bottom of the display show the current mode of operation (Comfort, Economy, Off, Anti-freeze) of the unit.
The flashing dash indicates you can set the current time.
To facilitate the programming operation, it is sufficient to recall as follows:

Dash on:

- Comfort mode is enables (' ☼ ' icon on)

Dash off:

- Economy mode is enabled (' ☾ ' icon on), if **U1** is set to '**Pr-1**'.
- Off mode is enabled ('⏻' icon on) or Anti-freeze mode (' ❄ ' icon on), depending on the settings made in **U4**, if **U1** is set to '**Pr-2**'.

To set the timer, proceed as described below.

```
AFTER SELECTING THE PARAMETER 'U3 PRG'
        PRESS THE ' ↵ ' KEY;
 THE LETTERS 'GRP' WILL BE DISPLAYED.
```

⇩

```
    USING THE ARROWS '▼' AND  '▲'
  YOU CAN SCROLL THROUGH THE DATA
    AVAILABLE: GRP, P_1..P_7.
```

⇩

```
  IF YOU WANT TO CHANGE THE GROUP OF
      DAYS SET, SELECT 'GRP'
     AND PRESS THE ' ↵ ' KEY.
```

⇩

```
     THE LETTERS 'GRP' WILL FLASH
        AND THE GROUP OF DAYS
                SET.
```

⇩

```
    USING THE ARROWS '▼' AND '▲'
  YOU CAN SELECT THE DESIRED GROUP
    OF DAYS: G-1, G-2, ALL, SnG.
```

⇩

Note: Below are the four combinations of days available:
***G-1**: Monday .. Friday + Saturday .. Sunday*
***G-2**: Monday .. Saturday + Sunday*
***ALL**: Monday .. Sunday (the same every day)*
***SnG**: Monday + Tuesday + Wednesday + Thursday + Friday + Saturday + Sunday (different every day)*

WARNING!
For each group of days, the program set will be the same for each day of that group.

⇩

```
   AFTER SELECTING THE DESIRED GROUP
    OF DAYS, PRESS THE ' ↵ ' KEY,
 THE UNIT WILL CONFIRM THE SETTINGS.
```

⇩

```
    USING THE ARROWS '▼' AND '▲'
  YOU CAN SCROLL THROUGH THE PRESET
     PROGRAMS RELATIVE TO THE
   COMBINATION OF DAYS SELECTED:
            P_1 .. P_7.
```

⇩

Note: Below are the possible programs to modify associated to the four combinations of days available:

G-1 **=>**	*2 programs*	*P_1: Monday .. Friday*
		P_2: Saturday .. Sunday
G-2**: =>**	*2 programs*	*P_1: Monday .. Saturday*
		P_2: Sunday
ALL**: =>**	*1 programs*	*P_1: Monday .. Sunday (same every day)*
SnG**: =>**	*7 programs (different each day)*	*P_1: Monday*
		P_2: Tuesday
		P_3: Wednesday
		P_4: Thursday
		P_5: Friday
		P_6: Saturday
		P_7: Sunday

⇩

```
  AFTER SELECTING THE PROGRAM TO EDIT
        PRESS THE ' ↵ ' KEY.
 THE DISPLAY WILL SHOW THE TIME OF THE
BEGINNING OF THE SETTING (00:30), THE
     LETTERS 'P_X' AND THE DASH
    RELATIVE TO THE CURRENT TIME
              WILL FLASH.
```

⇩

Note: P_X= number of program available being edited. The setting is made with a resolution of half an hour (if the time displayed is 00:30 this means the adjustment mode for the period of time between 00:00 and 00:30 is being set. If the time displayed is 01:00 this means that the adjustment mode for the period of time between 00:30 and 01:00 is being set, and so on).

⇩

```
USING THE ARROWS '▼' AND '▲' YOU CAN
   MOVE THE TIME CURSOR (EACH DASH
 CORRISPONDS TO HALF AN HOUR) AND BY
   REPEATEDLY PRESSING THE ' ☝ ' KEY
   YOU CAN SET THE ADJUSTMENT MODE:
COMFORT MODE:       '☼' ICON ON
ECONOMY MODE:       '☾' ICON ON
OFF MODE:           '⏻' ICON ON
ANTI-FREEZE MODE:   '❄' ICON ON
```

⇩

Note: the settings of the Economy, Off and Anti-freeze modes depend on the settings of the parameters U1 and U4.

⇩

```
  HAVING SET THE PROGRAM FOR THE DAY
      OR GROUP OF DAYS SELECTED,
         PRESS THE ' ↵ ' KEY.
   THE UNIT STORES THE DATA SET.
      ON THE CONTRARY, TO EXIT
         THE TIMER SETTINGS
     WITHOUT SAVING THE SETTINGS,
        PRESS THE 'esc' KEY.
```

⇩

```
USE THE ARROWS '▼' AND '▲' TO SELECT
    THE PROGRAM FOR THE DAY OR
   FOR THE GROUPS OF DAYS UNTIL
  THE ENTIRE WEEK HAS BEEN COVERED.
```

⇩

```
HAVING SET THE PROGRAM FOR THE ENTIRE
     WEEK, PRESS THE 'esc' KEY.
    THE LIST OF USER PARAMETERS
        IS DISPLAYED AGAIN.
```

Default timer
To facilitate the programming operations, the unit is preset as follows:

Combination of days: *Monday .. Friday +*
*(**G-1**)* *Saturday .. Sunday*

Setting the mode of operation:

P_1
Monday .. Friday

Mode of operation	Starting time	Ending time
Off/Anti-freeze	00:00	06:00
Comfort	**06:00**	**08:30**
Off/Anti-freeze	08:30	12:00
Comfort	**12:00**	**14:00**
Off/Anti-freeze	14:00	17:00
Comfort	**17:00**	**22:30**
Off/Anti-freeze	22:30	00:00

Three Comfort time slots
Total hours of probable start-up=10

P_2
Saturday .. Sunday

Mode of operation	Starting time	Ending time
Off/Anti-freeze	00:00	07:30
Comfort	**07:30**	**22:30**
Off/Anti-freeze	22:30	00:00

One Comfort time slot
Total hours of probable start-up=15

Note:
It should be noted that the start-up period and start-up times are regulated by law according to the place where the system is installed.
These times and the length of the total start-up time are decided by the installer, the administrator or by the individual owner of the system.
For more details refer to the approvals or to the person in charge in the Municipality where the system is installed.

RAPID INSTRUCTIONS TO SET THE TIMER

Note:
In order to proceed with the timer settings, it is necessary that the user parameter " U1 SFM " is set to " Pr-1 " or to " Pr-2 "; otherwise the timer cannot be set.

- Press the " 📖 " key.
- " **U1 SFM** " is displayed and the icon " **PROG** " is on.
- Using the arrows " ▼ " and " ▲ " select the parameter " **U3 PRG** "
- Press the " ↵ " key; " G - 1 GRP " is displayed, the icon " **PROG** " is on and the dashes corresponding to the days flash.
  Example of display:
  Gr 1 = 5 days + 2 days

  Gr 2 = 6 days + 1 day

  ALL = 7 days the same

  SnG = Each day is different

- Press the " ↵ " key again; the letters " GRP " will flash. Use the arrows " ▼ " and " ▲ " to choose one of the four preset combinations of days.
- Press the " ↵ " key to confirm the selection.
- Using the arrows " ▼ " and " ▲ " select the parameter " **P_1** "; the time 00:30 will appear and the relative dash, the first on the left, will flash.
- Press the " ↵ " key; " **P_1** " will flash on the display.
- With the arrows " ▼ " and " ▲ " the hour cursor moves (each dash corresponds to half an hour); by pressing the " ☝ " key repeatedly, you can set the adjustment mode:
  <u>If U1 SFM is set to Pr-1</u>
  Comfort mode: "☼" icon on
  Economy mode: "☾" icon on
  <u>If U1 SFM is set to Pr-2</u>
  Comfort mode: "☼" icon on
  Off mode: "⏻" icon on
  Anti-freeze mode: "❄" icon on
- Once you have set the timer for the day or the group of days selected, press the " ↵ " key, otherwise press the "esc" key.
- Using the arrows " ▼ " and " ▲ " select the next day or group of days (e.g. " **P_2** "); and proceed, as described above, to set the timer for the whole week.

"U4 TCR"

Comfort and Economy temperature settings

This parameter allows you to set the desired Comfort and Economy temperature.
The Comfort temperature is identified with the initials **TC**, whereas the Economy temperature is identified with the initials **TR**.

Setting the Comfort temperature

```
AFTER SELECTING THE PARAMETER 'U5 TCR'
    PRESS THE ' ↵ ' KEY AND SELECT,
     USING THE ARROWS '▼' AND '▲',
    'TC'; THEN PRESS THE ' ↵ ' KEY
              ONCE AGAIN.
```

⇩

```
  THE LETTERS 'TC' WILL FLASH ON THE
DISPLAY AND THE COMFORT TEMPERATURE
           WILL APPEAR;
 USING THE ARROWS '▼' AND '▲', SET
  THE DESIRED COMFORT TEMPERATURE.
```

⇩

```
   PRESS THE ' ↵ ' KEY TO CONFIRM
         THE SETTINGS OR
    PRESS THE 'esc' KEY TO CANCEL
          THE SELECTION.
```

Setting the Economy temperature

```
AFTER SELECTING THE PARAMETER 'U5 TCR'
    PRESS THE ' ↵ ' KEY AND SELECT,
     USING THE ARROWS '▼' AND '▲',
    'TR'; THEN PRESS THE ' ↵ ' KEY
              ONCE AGAIN.
```

⇩

```
  THE LETTERS 'TR' WILL FLASH ON THE
DISPLAY AND THE ECONOMY TEMPERATURE
           WILL APPEAR;
 USING THE ARROWS '▼' AND '▲', SET
  THE DESIRED ECONOMY TEMPERATURE.
```

⇩

```
   PRESS THE ' ↵ ' KEY TO CONFIRM
         THE SETTINGS OR
    PRESS THE 'esc' KEY TO CANCEL
          THE SELECTION.
```

"U5 LNG" - Language settings

This parameter allows you to set the desired language, Italian or English, for the days of the calendar.

```
AFTER SELECTING THE PARAMETER 'U5 LNG'
        PRESS THE ' ↵ ' KEY;
  THE LETTERS 'LNG' WILL BE DISPLAYED
ALONG WITH THE LANGUAGE PREVIOUSLY SET
       THEN PRESS THE ' ↵ ' KEY
              AGAIN.
```

⇩

```
    THE LETTERS 'LNG' WILL FLASH.
 USING THE ARROWS '▼' AND '▲', SET
  THE DESIRED LANGUAGE, ITA or ENG.
```

⇩

```
   PRESS THE ' ↵ ' KEY TO CONFIRM
         THE SETTINGS OR
   PRESS THE 'esc' KEY TO CANCEL.
```

TROUBLESHOOTING

The unit is able to display and, if necessary, manage any faults or alarms that are detected during operation.

Problem
The password has been forgotten.

Solution
Ask the manufacturer.

Problem
During normal operation or during the configuration of the system, the unit displays the hydraulic diagram with one or more probes flashing.

Possible cause
The flashing probe has not been connected or it is faulty.

Solution
Connect or replace the probe.

Problem
During normal operation, the unit displays the ' ' symbol and the red LED on the front flashes. The probe that generated the problem flashes.

Possible cause
The unit has detected an anomaly on the probes. The name of the damaged probe will be displayed and the type of anomaly will be indicated:
"- - - -": The probe has detected a temperature between -30°C and -20°C.
"EEEE": The probe has detected a temperature between +120°C and +150°C.
"OPEn": The probe has detected a temperature below -30°C or it is an open circuit.
This anomaly is detected only on the probes **Te** and **Td**.
"SHrt": The probe has detected a temperature above +150°C or there is a short circuit.

Solution
These reports will be present until, on the relative probe, the fault will be removed or the temperature will be risen/lowered.
Only if the unit displays "**- - - -**" or "**EEEE**", it will continue to make adjustments according to the logic set.

Problem
With the unit OFF, there is continuity on the output PUMP, between the contacts C - NC.

Possible cause
Normal operation.

Problem
The heating does not start at the set time.

Solution
Check if the setting is displayed ("☾" symbol on).
In this case, it depends on the settings and not on a fault.

Problem
The heating is always on at the same temperature.

Solution
Check the operating mode, only if the user parameter U1 is set to Pr-1 or to Pr-2 there is an automatic alternation between comfort and Economy of the temperature.

Problem
The system is equipped with a remote controller but it does not work.

Solution
Check that the Remote Controller (RC) is connected.
If the Remote Controller is disconnected, the function is disabled automatically and the icon of the "RC" will not appear on the display.

Problem
The desired ambient temperature is obtained too early or too late.

Solution
Change the times of the heating program.

Problem
The desired ambient temperature is not reached or it is exceeded.

Solution
If the ambient probe is present and the icon is shown on the display "Ta" the temperature detected may be distorted by air currents, other sources of heat, solar radiation, etc. These systemic errors must be corrected by changing the offset of the ambient probe from the installer parameter P6 > OFA (with password).

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